JPRS 83944

21 July 1983

West Europe Report

SCIENCE AND TECHNOLOGY

No. 149

FBIS FOREIGN BROADCAST INFORMATION SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semi-monthly by the National Technical Information Service, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

JPRS REPORTS

Japan Report
Korean Affairs Report
Southeast Asia Report
Mongolia Report

Near East/South Asia Report
Sub-Saharan Africa Report
West Europe Report
West Europe Report: Science and Technology
Latin America Report

USSR

Political and Sociological Affairs
Problems of the Far East
Science and Technology Policy
Sociological Studies
Translations from KOMMUNIST
USA: Economics, Politics, Ideology
World Economy and International Relations
Agriculture
Construction and Related Industries
Consumer Goods and Domestic Trade
Economic Affairs
Energy
Human Resources
International Economic Relations
Transportation

Physics and Mathmetics
Space
Space Biology and Aerospace Medicine
Military Affairs
Chemistry
Cybernetics, Computers and Automation Technology
Earth Sciences
Electronics and Electrical Engineering
Engineering and Equipment
Machine Tools and Metal-Working Equipment
Life Sciences: Biomedical and Behavioral Sciences
Life Sciences: Effects of Nonionizing Electromagnetic Radiation
Materials Science and Metallurgy
Meteorology and Hydrology

EASTERN EUROPE

Political, Sociological and Military Affairs
Scientific Affairs

Economic and Industrial Affairs

CHINA

Political, Sociological and Military Affairs
Economic Affairs
Science and Technology

RED FLAG
Agriculture
Plant and Installation Data

WORLDWIDE

Telecommunications Policy, Research and Development
Nuclear Development and Proliferation

Environmental Quality
Epidemiology

FBIS DAILY REPORT

China
Soviet Union
South Asia
Asia and Pacific

Eastern Europe
Western Europe
Latin America
Middle East and Africa

To order, see inside front cover

JPRS 83944

21 July 1983

WEST EUROPE REPORT

SCIENCE AND TECHNOLOGY

No. 149

CONTENTS

TRANSPORTATION

ELECTRONICS

SEMS TO BE FOCUS OF FRANCE'S MINICOMPUTER INDUSTRY

Main Activities

Paris ZERO UN INFORMATIQUE HEBDO in French special issue
18 Apr 83 p 4

[Text] From Mars to Telemecanique, from Telemecanique to Thomson, from Thomson to the Bull Machines Company, the Gresivaudan valley is both the cradle and the site of renewal for the SEMS [European Minicomputer and Systems Company]. The Grenoble area is the nerve center of the SEMS [the company's second center is located west of Paris, between La Chesnay and Louveciennes). In this valley, the company's technical and industrial divisions are housed at Crolles and Echirolles. While waiting for the company to be given its new responsibilities in the near future (see the following interview), this part of the company is working almost exclusively, for the time being, on the production of the Mitra and Solar computers.

The entire Grenoble staff of the SEMS consists in all of about 800 people, of whom 230 are engineers and management staff, 330 are technicians and supervisory personnel, and 240 are workers and office staff.

Two Centers for Two Phases

The technical and quality control divisions have about 280 people, and the industrial division, 450, with the balance in administrative, commercial, and marketing services.

SEMS-Grenoble in fact has two distinct centers of activity: Echirolles and Crolles.

The Echirolles plant, whose total staff numbers about 570, includes administrative services, the technical and quality control divisions, and part (220 people) of the industrial

division, subdivided into four departments: industrialization (interface between development and production); purchasing (determination of supply sources); production management (coordination of production units); and production itself.

The Crolles center itself has two units working solely on production, which deliver to the Echirolles plant finished subsystems which the Echirolles unit can then integrate.

So production is organized into two phases: a standardized phase during which, based on statistics and sales forecasts, components can be ordered and the basic elements can be prepared; and a phase related to the real needs of the customers. This begins with the reception of orders, and ends with the delivery of complete systems.

Production Plan of SEMS-Grenoble

(1) Type de matériels	Parc installé (2) au 31-12-82	(3) Production 1983		Moyenne mensuelle (6)
		1er semestre (4) Grenoble	2e semestre (5) Grenoble	
SOLAR				
16-04 · 16-05	598	2	0	2
16-30	—	9	12	11
16-40	1 676	15	21	18
16-65 · 16 75	771	21	25	23
16-85	—	2	2	2
Kits licences (8)	1 981	40	40	40
Extensions (9)	—	100	100	100
MITRA				
15-20	168	—	—	—
15-21	1 315	—	—	—
15-35	763	—	—	—
105	574	—	—	—
115	1 710	25	37	31
125	1 306	—	—	—
225	992	30	32	31
525	224	7	9	8
625				
Extensions	—	40	80	60
SÉRIE T (10)				
T 1600	621			
T 2000-20	382			
T 2000-10	309			
C 16	324	3	—	2
Extensions	—	15	10	13
Total des systèmes (7)	13 714			

Key for table on preceding page:

1. Type of equipment
2. Stock installed as of 31 December 1982
3. 1983 production
4. First 6 months, Grenoble
5. Second 6 months, Grenoble
6. Monthly average
7. Total systems
8. Kits sold under licensing arrangements
9. Extensions
10. Series "T"

From the Component to the System

As the SEMS has some major public customers, during the successive phases of manufacturing great importance is given to control and testing procedures:

a. Components input control. Over 3,500 components are tested every hour by the Crolles II unit. Several dozen suppliers are dealt with, and several hundred types of components are involved in the production of a system, so the SEMS has formed a data base which lists these exhaustively. The semiconductors are then soldered, and the cards obtained are again checked before being cleaned, and are then placed under and outside of voltage for 72 hours, in order to detect any defects.

b. The wiring and peripheral equipment are also given input checks, and for the peripheral equipment, there is a verification of the mechanical conformance and wiring, and electrical endurance tests. All of these subsystems are then stored, and are ready to be integrated in configurations.

c. Integration phase. This begins when the configuration of the system is known, and when a personalized report is prepared. All the cards and wiring are prepared in order to be assembled.

d. Preparation of the software, based on the instructions contained in the personalized report.

e. Compilation of documentation.

f. Platform test. Each module is tested in its context by specialized programs.

g. Verification of total conformance.

h. Implantation and connection of peripheral equipment.

i. Inhouse acceptance of the entire configuration.

On the average, a year elapses between the decision to begin manufacturing and the output of the finished product.

Interview with President

Paris ZERO UN INFORMATIQUE HEBDO in French special issue 18 Apr 83 p 5

[Interview with Francois Michel, CEO of the SEMS]

[Text] The SEMS, which became a subsidiary of the CMB [Bull Machines Company] at the time French industry was reorganized according to the recommendations of the Electronics Plan, snould, according to the government's intentions, toward 1990 become our national minicomputers pole. Francois Michel, who was recently appointed chief executive officer of the company, a company which he knows well since he was its technical director from 1976 to 1980, spoke with ZERO UN INFORMATIQUE about the major orientations of the new strategy now being prepared, a strategy which will result in the signing of an addendum to the group's planning contract within a few weeks (see ZERO UN INFORMATIQUE HEBDO, issues 736 and 738).

[Question] In your opinion, what are the positive aspects of the connection of SEMS to CII [International Data Processing Company]-Honeywell Bull, or to be more precise, to the CMB group?

[Answer] First of all, we have row become part of a group whose first interest is computers, whose directors think only of computers. We are now in a group with an exceptional international network. That should help us to make a change in scale in terms of the distribution of our products.

Moreover, at the time of the CMB reorganization, the SEMS was clearly identified as the group's minicomputer pole.

The SEMS was awarded the job of studying and developing the new line of minicomputers.

[Question] If you don't mind, let's go back to some aspects of each of these points. First of all, about the distribution of your products by the group's international network. What results do you expect there?

[Answer] The fact of having the benefit of such a tool is certainly an inducement to develop products, materials, and software for the international market. In particular, we have an obligation to respect international standards.

Furthermore, I believe that we must do away with the protectionist attitude that consists of developing specific interfaces. If the SSCI [expansion unknown] don't find French products compatible with the standards, they will develop their applications using foreign products as a base, primarily U.S.-made products. In my opinion, in the long run protectionism is harmful.

[Question] The SEMS' concentration on minicomputers has now been confirmed. Exactly what does that mean?

[Answer] It means that we do intend to strengthen this emphasis in order to make the company a powerful technical and industrial center, on a level with the stakes involved and the resources available. We are very well aware of the fact that if we don't succeed this time, French industry will disappear from this part of the market.

So we are now in the process of building up our potential, especially at the Grenoble center, for that is where studies for the new line of computers will be done.

Georges Grunberg, formerly deputy director general of the LETI [Electronics and Data Processing Technology Laboratory] and then of EFCIS [Company for the Study and Production of Special Integrated Circuits], has just taken charge of the Echirolles and Crolles plants, whose technical and industrial capabilities will be strengthened by his experience in the field of VLSI [Very Large-Scale Integration] circuits.

Jean-Claude Chupin has also just joined the SEMS as its technical director. After working in an IBM research center in the United States, he spent a number of years working with CII-HB in Grenoble.

Soon we will also have a quality control director and an industrial director. And we are now recruiting about 20 top-level engineers.

[Question] This is with the idea of developing the future line of minicomputers?

[Answer] Yes, of course. But before going any further on the latter point, I would like to mention the context in which we view this development of "building blocks" for mini and microcomputers.

Based on the volume of investments required, we need state aid, and there we run into a widespread problem in industrial policy. In addition, we feel that, even with state aid, we will still not be able to do everything.

We are Looking for Partners

That is why we are looking for partners, for example, small companies that are innovators in some highly specific areas. We could provide these companies with some support by giving them some subcontracting work. Or there could also be cooperation with large companies, either French or European, which want to penetrate some specific areas, corresponding to particular jobs in which computers and data processing play a large role. I have in mind, for example, areas such as XAO [Computer-Aided Developments in General]: robotics, flexible workshops, CAO [Computer-Aided Design], etc.

[Question] And within this prospect of cooperation, what is the specific nature of your proposals?

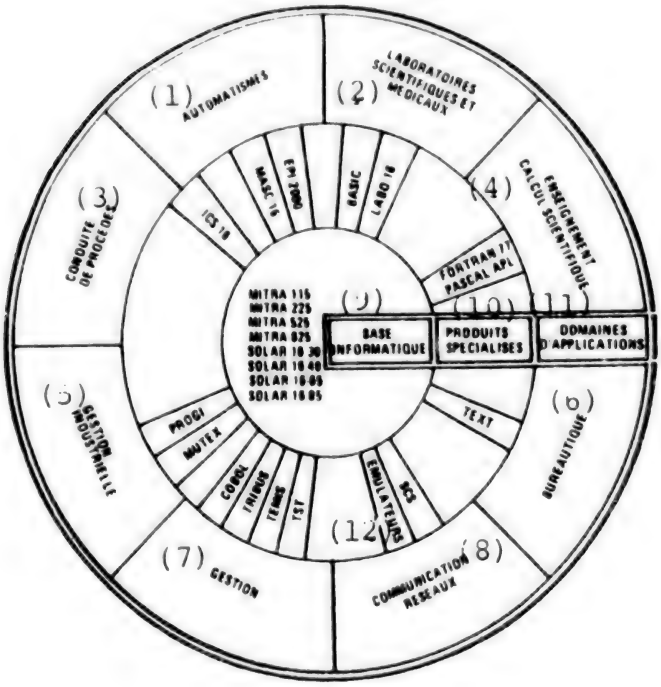
[Answer] That is very clear. We are ready to cooperate, in particular, with the SSCI or integrators of large groups, by giving to them, even before we begin to market our products, information on the standards and interfaces of our products, by providing models, prototypes, and pre-production models.

In this way we will offer these companies a fairly significant advance in order to develop their related products. In addition, we will agree not to take competitive partners in a specific area.

Let's make this clear: by this I mean that we will conclude an agreement with only a single partner in the field of CAO for VLSI circuits, for example; but we can still sign an agreement with another firm in the field of CAO for mechanics, etc.

[Question] And in return?

[Answer] We will ask our partners to make investments related to the development of specific products, using our computer base.



SEMS Equipment Lines and Related Software Systems

Key:

1. Automation systems
2. Scientific and medical laboratories
3. Process control
4. Education and scientific uses
5. Industrial management
6. Office automation systems
7. Management
8. Communication networks
9. Data processing base
10. Specialized products
11. Fields of application
12. Emulators

So "we won't hide our copies." For to us, the time parameter seems essential.

Because of the increasing complexity of products, the study time involved is tending to get longer. But on the other hand, it is true that we are starting from more advanced building blocks in

both our hardware and software systems: we now have compilers, operating systems, or application products such as Multiplan or Visicalc, which have been standardized.

Now we have to master the total time period down to marketing to the final customer. That is why we want to reach agreements with partners so that the application products can be developed at the same time as our basic products.

[Question] Could we talk about the future minicomputers?

[Answer] Right now, I wouldn't want to go into details, but let's say that the studies are in the phase of general specifications. The objectives have been defined, and the products and their costs have been identified.

We are living in a period of changing computer architectures.

We realize that the decisions we make today will bind us for a long time.

After saying that, our installed stock of minicomputers amounts to approximately 20,000 Mitra/Solar/Mini 6, and we can not disregard our customers' investments.

For this reason, we are making a commitment to continue and to improve the three present lines, by taking some major steps to help move these three lines toward a transition to the future version.

And to be completely open with our customers, I will add that if we think that the first elements of this future line should be ready in 1986, this means that the Mitra, Solar, and Mini 6 will still form the major part of our sales turnover until at least 1988.

[Question] Doesn't that also mean that the SEMS will have no 32-bit minicomputer in its catalogue before 1986?

[Answer] But we do have a 32-bit minicomputer in the group: the Mini 6.

[Question] When the SEMS was joined to CMB, there was an agreement signed by CMB and Thomson in the area of military computers.

[Answer] That's right. CIMSA [Military, Space, and Aeronautics Data Processing Company], Thomson's subsidiary working on the CMF [expansion unknown] project, and the SEMS are working together to develop a hardware and software architecture shared by both military and civilian machines.

[Question] What is the status of the SM 90?

[Answer] You know that this product, designed at the CNET [National Center for Telecommunications Studies] to meet the needs of the PTT [Postal and Telecommunications Service] for real-time data processing, was also found to be well suited for the needs of professionals developing software for advanced applications. The INRIA [National Institute for Research on Data Processing and Automation] has developed basic software for the SM 90. Now the product has to be industrialized, and that will be the job that the SEMS will do. We have established a GIP [Joint Group] consisting of CNET, INRIA, and SEMS, to derive special products from the SM 90. The first will be a scientific work position, which will also be one of our transitional elements toward another future line of products. Official announcements on this subject should be made sometime next July.

[Question] What about potential customers?

[Answer] Our potential customers are, first of all, the PTT. That in itself is a market of several thousand machines, with all sorts of telephone-related equipment, and with the scientific work position, we will have the scientific market.

[Question] But in the end, don't all these projects add up to an overly ambitious gamble?

[Answer] We are very well aware of what is at stake and of the difficulties involved. But we must regain our credibility, by proving the constancy of our goals, both inside and outside the company.

We do have the competence: now we must learn how to use it.

7679
CSO: 3698/311

PHILIPS SUBSIDIARIES MODERNIZE NMOS PRODUCTION TECHNOLOGIES

Paris ELECTRONIQUE ACTUALITIES in French 1 Apr 83 p 11

> [Text] Philips, one of the major world manufacturers of integrated circuits up to now has been using rather old and conservative technologies, but things are changing.

Thus the Mullard NMOS production unit (Philips British branch) at Southampton which up to now has been using a technology with 5 to 6 um lines (transferred from Signetics) should have available from mid-1983 a production line for diffusion on 4-inch wafers (800 wafers per day) with 2.5 um geometries (same thing for the NMOS center at Hamburg where customized circuits are produced). The same phenomenon should affect the CMOS production unit of Faselec in Switzerland, which is currently converting from 5 to 4 um and that of Philips at Nijmegen in the Netherlands where a 4-inch production line with 2.5 um geometries next year should replace the current technology with 4 um lines (the CMOS gate arrays of the company are diffused in this plant). Finally the first quarter of the NMOS production unit in Albuquerque in the United States equipped with 4-inch production lines, 2.5 um and which will have a production capacity of 2,000 wafers per day, should soon be operational.

Up 500 Percent for MOS Sales in Two Years

In Great Britain Mullard, which has 12 percent of the integrated circuit market (as much as National Semiconductor, Motorola, and Texas Instruments each and all the Japanese combined) has seen its MOS sales increase by 500 percent during the last two years. Although today bipolars still represent 70 percent of its sales in integrated circuits, Mullard hopes that in 1986 the MOS/bipolar distribution will be 50/50.

In 1982, according to the integrated circuits marketing director of the Philips British branch, Mullard showed a profit for the whole year, this positive result to be compared with those of Siemens and SGS-ATES (the two main European competitors of Philips in integrated circuits), which posted losses, is noteworthy in an industry where profit margins remain very low.

The turnover at Mullard is distributed equally between the consumer and industrial sector. In this latter sector data processing represents 35 percent,

telecommunications 25 percent, and military and aerospace 25 percent. In the consumer sector the principal markets are those of television, teletext, and remote control. The Southampton unit produces ROM's, integrated circuits for teletext and viewdata and integrated circuits for compact disks.

Again according to Mullard's integrated circuits marketing director, the British market for custom and semicustom circuits is exploding, the two types being equal and the CMOS technology more desired. But in this field nothing is manufactured in Great Britain; the standard cells and bipolar gate arrays are being made by Signetics, the ECL gate arrays by RTC, the CMOS by Philips in the Netherlands and purely customized circuits at Hamburg.

12410
CSO: 3698/284

PHILIPS NEGOTIATES ACCORDS WITH THOMSON

Paris ELECTRONIQUE ACTUALITIES in French 1 Apr 83 p 16

[Article by D. Levy]

[Text] Cooperation with Thomson was disclosed during a press conference organized by Philips on 24 March in Paris on the occasion of the presentation of the financial report of the Dutch group. This cooperation, keystone of a European agreement to confront Japanese competition, will not assume the form of a general accord but a group of accords on specific subjects. Thus Philips and Thomson are negotiating about V 200 magnetoscopes, the future 8 mm standard, components, and video games (on the last point an agreement is about to be concluded in the next few days). As for results, in 1982 Philips realized a net profit of 433 million florins (or 1.1 billion francs), a 21 percent increase, on a turnover of 42.9 billion florins (about 116 billion francs). Forecasts for 1983 focus on a volume sales increase slightly greater than that of 1982 (+4 percent) and a new improvement in results.

Philips denies any responsibility for the failure of the attempt to take control of Grundig by Thomson. After having called the German office of cartels "totally outmoded European legislation," Philips prefers to close the chapter and develop a series of specific agreements with Thomson, in order to meet Japanese competition in the field of consumer electronics.

Philips first of all wants to arrive at an agreement with the French manufacturer on V 2000 video recorders in order to enlarge the market share of these models. Philips, which believes that its standard still has a long life, claims 15 to 20 percent of the European video recorder market. "We have regained the territory lost at the beginning of 1982 because of Japanese dumping," Philips indicated.

If the accord on the V 2000 is "desirable" Philips considers that it is "absolutely vital" to arrive at an agreement with Thomson on the "8 mm." This new standard has just been adopted by Tokyo by 120 worldwide manufacturers, but Philips, with Thomson, is seeking extensive standardization of the elements, even joint production.

Other accords are under discussion with Thomson, in particular on components and video games. Concerning the latter, an agreement may be about to be announced publicly within the next few days. It could take the form of distribution of Philips' video games by Thomson before passing to the stage of licensed manufacture.

2.4 Billion Florins of Investment

In telecommunications Philips is negotiating (until 30 April) with ATT on terms of cooperation concerning a joint subsidiary (50-50) responsible for commercializing the ESS-5 earth-based switching exchange for all markets outside the United States. A second deadline is set for May or June to achieve this cooperation and to extend it beyond the public earth-based switching exchanges (perhaps to broadcasting). There is nothing new concerning the initiation of cooperation with other European manufacturers; some discussions with CIT-Alcatel are being conducted, but apparently without enthusiasm.

The turnover realized by Philips in 1982 was distributed at a rate of 11 percent for lighting and batteries, 27 percent for consumer image and sound, 12 percent for household appliances, 32 percent for professional equipment, 13 percent for components, materials, and welding equipment, and 5 percent miscellaneous activities.

Expressed by geographical breakdown, in 1982 Philips' turnover was realized 56 percent in western Europe, 23 percent in the United States and Canada, 8 percent in Latin America, 7 percent in Asia, 3 percent in Africa, and 3 percent in Australia and New Zealand. Note that the number of Philips' employees rose to 336,200 on 31 December.

As for 1983, Philips expects a slight recovery of the world economy. Under these conditions the company forecasts an increase in volume turnover slightly greater than that of 1982. However there will be a new decrease in the number of employees (more than 10,000 persons, especially in Europe). Finally the Dutch group forecasts investments of the same order as last year (2.4 billion florins) concentrated principally in Europe (and more than 50 percent in the EEC) and in the United States where they reached 20 percent last year. Due to these measures and a decrease in financial expenses (in relative value) Philips forecasts a new improvement in results for fiscal 1983.

12410
CSO: 3698/284

NEW PROCESS FOR IMPREGNATING FIBERS WITH NON-LIQUID RESIN

Paris L'USINE NOUVELLE in French 24 Feb 83 p 86

[Article by Pierre Laperrousaz]

[Text] The development of new polyamide powders with highly sophisticated granulometry may lead to a totally new process for making thermoplastic-matrix composites.

The manufacture of thermoplastic-matrix composites with reinforced long fibers poses the problem of impregnating the fibers with a non-liquid resin at ambient temperatures, because holding this resin in the molten state during impregnation could cause it to lose some of its properties.

An original solution has been found by ATO-Chimie. It consists of introducing the resin (in this case a polyamide) into the reinforcing fibers in the form of a very fine powder, using an electrostatic process, with melting taking place afterwards and in a very short span of time.

The process became feasible with the development of powders having rounded, micro-porous shapes, with very fine granules (10 to 35 microns), only very slightly scattered and compatible with the diameter of current reinforcement fibers. These powders, commercially produced for about a year now, under the trade-name of Orgasol, have already found applications in other areas: powdered coatings, additives to paint (improving its resistance to abrasion and flexing, texturizing primer coats), and even in cosmetics, thanks to their very high absorbency. There is no grinding involved, as with conventional polyamide powders. Particle formation takes place "in situ" at the point of polymerization, and that is what gives them their physical and geometrical properties.

Applications in the field of composites will still require major development efforts before they can be produced on an industrial scale. ATO-Chimie, though, working with others, has already evaluated a number of processes. The most advanced of them

apparently is a way to band metal or plastic tubes, which was developed with SPI-Flex: an electrostatically charged roving is continuously impregnated by passing it through a fluidized bed of powder, then wrapped under tension in contiguous and overlapping turns around the structure to be reinforced; subsequent melting ensures that the composite will be homogeneous. By this process, a steel tube designed for a working pressure of 80 bar, with wall thicknesses of 6 to 12 mm, depending on the diameters, can, with 2 to 3 mm of collaring, handle 150 bar. To take pressures like this, a tube made entirely of steel would have to be 25mm thick. Similarly, a cylinder designed for 200 bar of pressure can, given a 2-mm collaring, stand up to twice its design operating pressure.

According to ATO-Chimie, the process is equally suitable for powder extrusion, filament winding, for fabricating embossable thermoplastic plates (through impregnation with carbon black and glass), and also for forming metal-and-plastic sandwiches. In this latter case, the process consists of continuous deposition of a layer of Orgasol 150 to 200 microns in thickness (either electrostatically or by dispersion in a solvent) on a metal plate 2/10 in thickness. Then, by bringing two plates together, thermoplastic to thermoplastic, and heating them under slight pressure, you get a sandwich with a polyamide core 4/10 thick weighing around 3.6 kilos/square meter, as compared with 6.5 kg/m^2 for a steel plate of the same thickness (8/10). This process should prove less costly than the more conventional technique of extruding the plastic core and then laminating it with the two metallic surfaces.

6182

CSO: 3698/326

BRIEFS

GOVERNMENT AIDS COMPOSITES DEVELOPMENT--The National Research Promotion Agency (ANVAR) has just issued a request for proposals dealing with composite materials. The aim is to provide financial aid to companies of all sizes interested in new applications for composites. The competition is open without discrimination to all companies, whether or not they are familiar with existing application techniques. Anvar's aid will take the form of a prize for innovation. For firms already experienced in the composites field, proposals will be handled directly by Anvar. If the firm has no such experience, it can call on a network of regional technical advisers now being set up. The advisers will include all the big names in the sector: Aérospatiale, Sep, Dassault, Vetrotex..., as well as existing agencies such as Codemac in Bordeaux and G3F in Lyon. The proposals will be examined by specialists who will be looking for two features: technical innovation and financial and economic soundness of the operation. The total amount to be made available to companies is on the order of 20 million francs. The criterion for granting aid will be essentially the technical and economic feasibility of the proposals submitted. This means that a company may submit several proposals if it feels capable of handling them all. That ability will be checked out by the experts on the jury. Closing date for submission of proposals is 30 April 1983. [Text] [Paris INDUSTRIES & TECHNIQUES in French 1 Dec 82 p 14] 6182

CSO: 3698/326

FRG INDUSTRIAL POLICY, STRATEGY, METHODS IN THIRD WORLD

Paris NOTES ET ETUDES DOCUMENTAIRES in French 15 Feb 83 pp 9-21

/Excerpt/ **Objectives**

Through a policy of industrial cooperation with developing countries, public authorities seek on the one hand to promote economic expansion and external growth of the FRG, and secondly to facilitate Third World industrialization. From that standpoint, industrial cooperation is as much a response to international economic challenges as to Third World political demands.

German enterprises are the essential motivating force of that cooperation. However, while they extol the role of free enterprise and have little belief in the virtues of aid or planned economy, West German leaders nonetheless consider they must accompany, and even orient, the strategy of enterprises in accordance with the means available to them and the imperatives which guide them. In this sense, the image of an FRG in which government intervention limits itself to major choices of budgetary policy is but a fiction which Bonn at times is pleased to maintain vis-a-vis its foreign partners.

Action by public authorities takes place at three levels:

Initially, it is a matter of placing the West German economy in a competitive position, and to that end restructure industry, grant aid to enterprises, and favor research and development, so that industry will specialize in activities of high technological intensity. We shall not, however, touch on industrial redeployment, which is beyond the scope of this study;

Next, it is a matter of committing enterprises to cooperation with Third World countries, particularly through a policy of financial incentives. German heads of enterprise, of course, are inclined towards foreign markets, doubtless by tradition, and they share the federal government's objectives: to wit, institution of an international division of labor between technologically sophisticated countries and those less so. Nevertheless, it appears necessary that public authorities should lend specific support to small and

medium enterprises, which for reasons of size, organization, and financial resources, are not always in a position to carry out a policy of implantation abroad;

Finally, it is a matter of making possible the implantation of enterprises by developing the material infrastructure (communications, etc.) and the non-material infrastructure (personnel training, etc.) of host countries through technical and scientific cooperation. Here, action by public authorities joins that of German enterprises, particularly in the domain of professional training, while complementing or even correcting the latter: The federal government in fact grants technical aid to the poorest countries, which do not attract investors. Technical cooperation plays a triple role in implantation abroad: it is necessary to build an infrastructure in developing countries, for without it enterprises could not function; technical cooperation introduces patterns of exchange, trains men in German working methods and resources, and creates--in every sense of the term--a "clientele" accustomed to those methods and resources; and finally, developing countries become more and more oriented, in their choices of economic partners, toward those able to take part in creating local industrial capacities. Adaptation of techniques to the needs of developing countries takes on a certain importance in this regard, and the federal government strives to further it by facilitating and orienting innovation by enterprises.

These, then, are the two levels of encouragement used by the federal government: technical cooperation with developing countries, and support of innovative action by enterprises through financial aid both to developing countries and to enterprises at home. Although financial aid to enterprises and public assistance to developing countries have long been part of the federal government's panoply of action, its promotion of appropriate technologies is of recent emergence, as is its marked interest in small and medium firms. [1]

Instrumentalities

To implement its policies the state acts through ministries. Those principally concerned are:

The Ministry of Cooperation (Bundesministerium fur wirtschaftliche Zusammenarbeit - BMZ);

The Ministry of Economy (Bundesministerium fur Wirtschaft - BMW);

The Ministry of Research and Technology (Bundesministerium fur Forschung und Technologie - BMFT.

Included as well are the Ministries of Foreign Affairs, Treasury, and the Chancellery, which determine major orientations.

Moreover, there exist in Germany a number of private organizations charged with implementing government policy for cooperation with developing countries. The three major ones are:

The German Economic Cooperation Company (Deutsche Gesellschaft fur wirtschaftliche Zusammenarbeit, also called the German Development Company - Deutsche Entwicklungsgesellschaft - DEG), a limited liability company founded in 1962;

The German Technical Cooperation Company (Deutsche Gesellschaft fur technische Zusammenarbeit - GTZ), a limited liability company created in 1975, out of which grew a working unit constituted in 1978, the German Appropriate Technology Exchange - GATE);[2/]

The Credit Institute for Reconstruction (Kreditanstalt fur Wiederaufbau - KfW), founded after the war to manage Marshall Plan funds.

Not included above are a fair number of private organizations somewhat like the French associations created pursuant to the law of 1901 for aid to development, research and innovation.

The German system differs from the French in that it is decentralized, horizontal, and made up of more or less autonomous units. Coordination is by contractual agreements between those units, as well as between them and the principal ministries concerned, that of Cooperation and that of Research and Technology, which define major orientations, cap the whole structure, and form a bridge between the public sector on the one hand and industry and research organizations on the other.

The system is flexible, permits deployment of initiatives, and further contributes to a certain effectiveness of operation by agencies charged with implementing federal policy, which feel responsible because of their autonomy. On the other hand, communications between various units and overall cohesion are at times faulty, but agreements between the two ministries concerned, Cooperation and Research and Technology, strive to remedy this.

Following this brief presentation, the instruments and modalities of federal industrial cooperation policy will be studied following two basic viewpoints: financial support to German enterprises and developing countries, and technical cooperation, which includes promotion of innovation in the FRG and technical cooperation with developing countries.

Financial Support

Aid to Exports

Although aid to exports does not, strictly speaking, come under procedures for industrial cooperation, we shall nevertheless briefly examine mechanisms for such aid, insofar as it contributes to development of capital goods exports, particularly including industrial complexes, and to that extent fosters a transfer of technology to developing countries.

Traditionally, support by public authorities in matters of export credits does not attain the same proportions in the FRG as in other industrialized

countries such as France: only 14 percent of 1980 exports were financed by public credits, as compared to 34 percent in France, 39 percent in Japan, and 18 percent in the United States.

Two organizations direct the flow of credits for exports:

First, the Credit Institute for Reconstruction, a public institute originally charged with managing Marshall Plan funds, has the particular task of financing sales of capital equipment to developing countries. Each year, it grants more than a billion DM in export credits, of which more than half is for sales of capital equipment to the Third World, while the balance is intended to promote sales of ships, of the Airbus, etc. In 1979 this type of financing was distributed geographically as follows: Latin America, 31.3 percent; Africa, 15.7 percent; Asia, 31.2 percent; European developing countries, 4.7 percent; and industrialized countries, 17 percent;

Secondly, the Exports Credit Company (Ausfuhrkredit Gesellschaft), a limited liability German banking pool, benefits from public aid for rediscount of slice B [2] credits specifically intended to finance capital goods exports to the Third World and eastern Europe. In 1978 approximately 60 percent of slice B financed exports to the Third World, and 40 percent to eastern Europe.

The HERMES guarantee, counterpart of the COFACE guarantee,[4] is required for disbursements of credits for exports by either institute.

Only about 10 percent of German exports (or DM 25 billion in 1979) receive the HERMES guarantee; of that total, less than 10 percent are financed by slice B, and hardly 3 to 4 percent by the Credit Institute for Reconstruction. That is to say, on an overall basis, credits intended to sustain exports intervene only to a limited extent. Moreover, as long as German interest rates remained low those special credits were hardly advantageous.

However, the rise of the DM, then that of the interest rate, and the pressure by foreign competitors who have recourse to mixed financing procedures, have undermined the competitiveness of German exporters. This is particularly the case for sales of major industrial complexes to developing countries, an exports sector which is of interest on two counts: first because total orders are considerable, and secondly because it induces secondary exports.

And although German products continue to enjoy a good reputation for quality, as well as for the technology they incorporate, they nonetheless suffer from one handicap: that of high prices, to which is added the absence of favorable financing conditions; for German exports must be refinanced at the market rate, while their competitors benefit from government support in the form of credits at the minimum rate defined by OEEC, to which are often linked aid credits at low interest rates. Moreover, the extent of financial

risk incurred by exporters of large complexes would justify increased government aid: first, because the orders total is constantly growing, while German enterprises often have less available financial capacity than their foreign counterparts, for the propensity of invest in productive capital is not high in the FRG; and secondly because the indebtedness of developing countries acquiring capital equipment is growing. In those conditions German exporters of large industrial complexes consider the HERMES guarantee insufficient.

In the face of such difficulties the federal government has decided to make greater use of the mixed financing formula, which combines public credits with funds provided by the private capital market, than was done in the past. This has been the case especially since 1979.

Aid to Investments

More than exports, investments constitute the major force transfers of technology. To induce enterprises to invest in developing countries, German public authorities have made use of such measures as guarantees and indemnities, tax rebates, and recourse to banks or investment companies, which are also in effect in other industrialized countries. We emphasize, however, two aspects of such measures which are at least interesting if not original:

Since 1977 the federal government has taken particular interest in forms of cooperation not linked to direct investments, for which it has instituted a special guarantee;

There exists in the FRG a joint financing company, the Deutsche Gesellschaft fur wirtschaftliche Zusammenarbeit (DEG), or German Economic Cooperation Company, whose operation and missions are not exactly analogous to those of the French Central Economic Cooperation Fund or its affiliate the Economic Cooperation Development and Participation Company (PROPARCO).

Guarantees and Indemnifications

Through the firm Treuarbeit, SA, a Hamburg trust company, the state guarantees German investments abroad in the form of participation, loans associated with participation, or increases in the capital of affiliates or production units, to cover such political risks as nationalizations, wars or revolutions, or limitations on convertibility or transferability of funds.

These guarantees are granted subject to two conditions: first, assurance that the investments undertaken are economically profitable; and secondly, the existence of an appropriate legal framework, particularly including treaties intended to promote investments. These treaties contain a nondiscrimination clause guaranteeing the investor against expropriations and nationalizations, permitting transfers of capital, and providing for recourse to an international arbitration tribunal. In 1980 there were 41 treaties in force between the FRG and Third World countries. Others were in process of negotiation or concluded though not yet in force.

The guarantee covers a period of 15 to 20 years, and 95 percent of sums committed are covered. Up to 31 December 1980 the federal government had granted guarantee requests totaling DM 4.5 billion.

The major portion of totals guaranteed is for investments in Latin America, which absorbed 36.4 percent of the total sum guaranteed up to 1980; next came investments in Africa with 28.2 percent, Asia with 24 percent, and Europe with 11.4 percent. The complete list of countries for which investment guarantees have been granted appears in appendix 2, p. 79 [not included]

The state also guarantees loans linked not to purchases--as export credits are--but to projects which a German creditor may grant either to a foreign government or public agency, or to a foreign private debtor. In the first case, the risks covered are political; in the second, they are economic. From 80 to 90 percent of sums committed are covered. This system of guarantees is not limited to developing countries.

Since 1977 the federal government has introduced a new procedure to permit development of forms of cooperation not linked to direct investments. It grants a guarantee, in the event of political risks, to service contracts and to production sharing contracts. Sums committed by the German contractor are covered to 70 percent. Few such contracts, however, have as yet been granted.

Fiscal Measures

Fiscal measures intended to facilitate investments abroad consist either of general provisions favoring investments in all foreign countries, or of specific provisions concerning developing countries.

Among general measures, the "law on fiscal provisions concerning investments abroad by the German economy" allows German investors, under certain conditions, to set up nontaxable reserves for a 5-year period. Losses by foreign affiliates are deductible from taxable totals if an agreement on avoidance of double taxation has been concluded.

The FRG has signed such agreements with 26 governments. Although these agreements are not specifically intended to promote German investment in developing countries, the federal government has nevertheless sought to promote them, particularly by seeing that no provision nullifies tax exemptions provided by developing countries to attract foreign investors. In the absence of a convention, a law on taxation of residents abroad makes similar provisions.

The tax law applicable to developing countries adopted in 1963 was abrogated in 1982. It stipulated that German enterprises could set up nontaxable reserves to a maximum of 100 percent with respect to investments in the least advanced countries (group 1), and 40 percent for those in other developing countries (group 2). Its abrogation was by reason of the weakness of its incentive power.

Overall, the German regime is one of the most favorable in the world, for the same reason as the French regime, though it is perhaps a bit more flexible than the latter with regard to developing countries.

We should not, however, overestimate the importance of fiscal measures or guarantee procedures: thus no investments promotion treaty has been signed with Brazil, which attracts the bulk of German investments in developing countries (the list of countries with which such treaties have been concluded is found in appendix 3, p. 80 [not included]). Moreover, an enterprise does not invest in order to benefit from fiscal measures, but to reduce costs or conquer a market; and although fiscal measures play a role in the policy of enterprises, it is not so much those taken by the investing country, but rather those taken by the receiving country.[3/]

More important than guarantees or tax incentives are financing facilities, which are prior to investments.

Financing Facilities

The measures enumerated above are available to any German enterprise investing abroad. In principle, financing facilities are more especially intended for small and medium enterprises, which in contrast to large enterprises do not have the financial capacity needed to invest abroad. Measures from which small and medium enterprises can benefit are of three types: co-financing by the DEG, commercial bank loans, and investment bank participation.

Co-Financing by the German Economic Cooperation Group DEG

Founded in 1962, DEG is a financing institute whose sole stockholder is the federal government. Its capital, which was increased to DM 1 billion in 1978, comes from successive state donations.

Its principal function is to extend financial support to small and medium enterprises wishing to start joint ventures[4/] with a public or private partner in a developing country. DEG's financial support takes the form of minority participation in the joint venture, or of a loan linked to participation. Concurrently, DEG functions as a pre-investment research agency, advises investors, promotes contacts between them and their possible foreign partners, and manages investments undertaken.

In summary, DEG must in its own words attain a dual goal: that of contributing to the economic and social development of receiving countries, particularly the least industrialized, in conformity with their development plans; and that of permitting small and medium German enterprises to invest by providing them with the necessary funds. Pursuant to those objectives, it specifically favors projects for transfers of technology and know-how, development of mineral resources and of any enterprise leading to creation of permanent employment and structural improvement of the balance of payments of host countries. In addition, it operates according to principles of profitability and rejects unprofitable projects.

It is not surprising that in consequence the geographical distribution of joint investments financed by DEG differs from those of German investments in developing countries; the former are concentrated above all in newly industrialized countries,[7] while the latter are greater in Africa. Moreover, the production units created are most often small and medium enterprises.

Creation of a "French DEG" has been discussed and considered by a good many people and organizations in France. Without repeating what has been said on this subject, we simply point out here that French observers are on the whole agreed on the need for a co-financing institute with the capabilities and financial resources to act without regard to geographic selection, whether it would be an existing organization such as the Central Economic Cooperation Fund, whose powers would be broadened, or a new institution.

From that perspective, it may be of interest to mention criticisms which have been made concerning DEG operations:

The DEG is not well implanted at the local level, whereas the French Central Economic Cooperation Fund enjoys good local representation and has good knowledge of the terrain;[8]

According to certain observers, analysis of the economic impact of projects on the receiving country is too summary;[9]

The technical aspect of projects is not sufficiently analyzed, and there are no engineers among DEG personnel. Therein certainly lies the source of the financial losses suffered by DEG,[10] although it applies the principle of balanced development and good profitability for participants;

Although it should make less than 36 percent of its commitments to projects involving the 100 largest German companies or their affiliates, DEG makes over 60 percent of its commitments to such projects;

Finally, though its vocation is to cooperate with the least developed countries, DEG devotes no less than 52 percent of its financial resources to newly industrialized countries.

Those shortcomings, however, can in no way detract in principle from the advantages of a co-financing institution.

Bank Loans

In addition to DEG, an agency for participation which has existed since 1962, the Ministry of Cooperation in 1979 created a "package" of DM 25 million to facilitate investments in developing countries by small and medium enterprises by means of credits at favorable interest rates, for the purpose of setting up, enlarging, or acquiring an affiliate, or participating in a joint company. Loans are made to small and medium enterprises whose yearly turnover is less than DM 20 million. Interest rates are 2.5 percent

per year on sums invested in least developed countries, and 3.5 percent in other cases. This system, established in 1979, is more advantageous than the preceding one, which made loans at 6 percent per year.

Investment Banks

In some countries the federal government, jointly with local public authorities, has created investment companies to facilitate financing of joint enterprises in the host country. A notable example is the German-Mexican Investment Fund established in 1977 by agreement among the German-South American Bank, a joint stock company with headquarters in Germany, and the Mexican National Investment Bank. The latter contributes 60 percent of the Fund's capital, while the two German institutions contribute 40 percent. Mexico has concluded similar agreements with other industrialized countries, particularly France.

FOOTNOTES

1. Small and medium enterprises weigh more heavily in the German export effort than their French counterparts. However, the small or medium German enterprise is larger than the French one: that term is applied in Germany to any enterprise with an annual turnover of less than DM 20 million or fewer than 500 employees.

2. Note the English acronym and name. The GATE brochure is also published in English.

3. Slice B, intended to subsidize exports of capital goods, is accorded the financial facilities of the Bundesbank, unlike slices A and C, which are lines of credit for other purposes.

4. French Insurance Company for Foreign Commerce.

5. Cf. Axel Halbach, "Industrial Redeployment Tendencies and Opportunities in the Federal Republic of Germany," IFO (Institut fur Wirtschaftsforschung), Munich, 1976, p. 56. This study was made at the request of UNIDO.

6. Joint venture: creation of joint affiliates by agreement between a foreign investor and a local partner [source editor's note]

7. See below, pp. 53 et seq.

8. This is noted by Folker Frobel, Jurgen Heinrichs, and Otta Kreye in "Die neue internationale Arbeitsteilung," Rowohlt Taschenbuch Verlag, Reinbek bei Hamburg, 1977, p. 199.

9. Judgment by German researchers. Cf. Helmut X. Helmschrott and Christian Pollak, "Instrumente und Praxis anderer Geber im Grenzbereich zwischen offentlicher und privater Zusammenarbeit mit den Entwicklungslandern," IFO, Munchen, Nov. 1979, p. 125.

10. Each year since its creation, DEG has recorded considerable losses: in 1978 they amounted to 20 percent of its income and 1 percent of its capital funds. Cumulative losses from the start through 1978 reached DM 80 million out of total investments of DM 355 million, or 22 percent of the investment.

6145
CSO: 3698/285

FRENCH MINISTER GIVES RESEARCH 'ABSOLUTE PRIORITY'

Paris AFP SCIENCES in French 5 May 83 p 5

/Text/ Research constitutes an "absolute priority" and must be accorded "privileged treatment" within budgetary restraints imposed by the economic situation, in the opinion of Laurent Fabius.

"I believe the Prime Minister and President share my point of view," added the Minister of Industry and Research in an informal conversation with the scientific press on 28 April following a meeting of the Higher Council for Research and Technology which he heads.

Mr Fabius indicated that in any case it was his intention to "fight to obtain privileged treatment" within the context of budgetary allocations, of which the government is now concluding its study, although as he admitted "no ministry can escape those regulations "in view of the economic trend." Regarding the civilian research budget, another reliable source indicates it is likely to be "far below the 25 percent which will probably be the rule for reductions in most other ministries' budgets."

It will be recalled that "budgetary regulation" measures consist of eliminating a certain percentage of the part of the initial budget that is allocated to ministries for "program authorizations" (all that does not concern their operating budgets: salaries, etc.) These "program authorizations," which for research represent approximately half the civilian budget, are devoted mainly to financing of major equipment and new research programs.

Recalling that the emphasis is to be placed on three major poles consisting of training, research and technology, and modernization of the productive apparatus, the minister stressed the importance of basic research in that context. He took satisfaction in noting that the "research-industry synergy" seems henceforth to be "well accepted" by both industrialists and researchers.

Mr Fabius announced, moreover, his choice of Professor Jacques-Louis Lions, president and director of INRIA (National Institute of Data Processing and Automation Research) and member of the Academy of Sciences, as his scientific advisor.

6145
CSO: 3698/312

SCIENCE POLICY

FABIUS PRESENTS PLAN FOR INDUSTRIAL MODERNIZATION OF FRANCE

Paris AFP SCIENCES in French 5 May 83 pp 1-3

/Text/ Minister of Industry and Research Laurent Fabius on 29 April presented to the council of Ministers a report on "the industrial situation and prospects of France."

In order to broaden the "industrial defense and expansion effort necessary for national independence and sustained employment," states the official communique issued at the close of the council, major technological programs, with electronics first among them, will be supplemented by new measures to meet three objectives: to contribute to the stability of foreign commerce, to complete high technology projects capable of stimulating our enterprises and maintaining employment, and to improve conditions of work and daily living.

During the next three years these innovative actions will focus primarily on:

Development of highly fuel-efficient vehicles, particularly a car to consume but 3 liters of gasoline per 100 km;

Installation in enterprises of high-technology machines and equipment;

Equipment of private and public secondary schools with French-built microprocessors, with a planned implantation of 20,000 units;

Development of office automation and information storage;

Biotechnologies, particularly for agricultural and food production and for health protection.

Financing of these programs will be facilitated by an "industrial modernization fund" which will extend participative loans at "low interest rates" (which does not mean exempt), and by lease credits to induce enterprises to acquire capital equipment.

In a press conference following the council meeting Fabius indicated the fund's resources will come initially from sums collected by the deposit fund (up to Fr 3 billion). The balance will be provided by an industrial savings deposit account to be created by the end of the year.

"It will be analogous to, or better, identical with account A of the postal savings system," the minister indicated. He gave no details, however, on modes of its operation, which are still to be laid down.

The Minister of Industry will preside over the modernization fund, which will be closely associated with ANVAR [National Agency for Valorization of Research], and will work in liaison with such existing organizations as the small and medium enterprises credit institution or the national credit institution. Its creation will be accompanied by elimination of existing financing procedures like CODIS [Comittee for Development of Strategic Industries] and CIDISE [expansion unknown], which will be merged with the new fund.

In addition, three measures have been adopted to encourage creation of enterprises: the two-year leave of absence for employees wishing to start their own enterprise is confirmed; and the use of single centers for administrative formalities will be broadened so as to simplify procedures.

The system is supplemented by tax exemptions for industrial enterprises created after 1983. This measure concerns corporate income taxes or the IRPP [Physical Persons Income Tax] of individual proprietors. In addition, local communities will have the option of granting newly created enterprises exemptions from business and real estate taxes. But neither the value added tax nor the excise tax on petroleum products are affected.

This new series of decisions does not eliminate those which have been in effect for the past two years, and programs currently in effect will be carried out to their conclusion. They particularly affect:

Professional training and development of research, which have benefited from an unprecedented effort;

Financial measures to sustain investment, particularly in nationalized enterprises;

The special fund for large projects, which makes it possible to sustain activity in the construction industry and in public works, as well as to effect economies in the use of energy;

A program of action in particular sectors, aimed at restructuring the steel, chemical, shipbuilding, and railroad equipment industries, and at strengthening the machine tools and textile industries.

In addition, various measures will aim to promote a more favorable operating environment for industry:

Freedom of pricing: in keeping with commitments made, it is in industry, which faces international competition, that freedom of pricing must be restored as rapidly as possible, while maintaining an energetic fight against inflation;

Creation of enterprises and innovation: Industrial enterprises created from 1983 onward will be exempted from direct taxes during their first three years of operation. Employees wishing to create an enterprise will be able to take advantage of a two-year leave of absence. Single centers for completion of administrative formalities, intended to lighten procedural steps, will be set up in all departments;

Export effort: A national export school will be established in liaison with professionals and agencies concerned. It will be open to students from universities and state professional schools who wish at the end of their studies to cap their training with an export-oriented specialization.

Industrial development, as the Council of Ministers communique further states, "will be the first objective of the Ninth plan. It is the reason for the effort asked of the French people today."

Indeed, "after 10 years of stagnation or decline in investment, French industry--despite some remarkable successes--suffers in several sectors from insufficient competitiveness, which is reflected in foreign trade statistics. Industrial recovery, then, is an absolute imperative for France. It is a matter of consolidating our country's place among the five major industrial powers, and of adapting our enterprises to the technological mutations in process at the end of the century.

"In the forefront of the economic struggle, our enterprises need the support of the whole nation," the communique emphasizes. "Full recognition of the rights of those who work in them should contribute to that support. Thus, in the context of stable 'rules of the game,' development and modernization of our productive apparatus should be the concern of the whole body of enterprises; whether they be small, medium, or large; and whether they belong to the private, public, cooperative, or mutual sectors."

A debate on French industrial strategy will be proposed for the fall session of Parliament "in order to associate the national representation with this true industrial mobilization."

6145
CSO: 3698/312

SAS WANTS ALL-NEW COMMUTER AIRCRAFT UNLIKE ANY IN PLANNING

Stockholm DAGENS NYHETER in Swedish 6 Jun 83 p 7

[Article by Lars Dahl]

[Text] Paris, June--This time not even champagne, long lunches, or nightly rounds of entertainment were able to really lighten the mood among the world's aircraft manufacturers taking part in the International Air and Space Show at Le Bourget Airport in Paris, which has now closed. There were 900 exhibitors--from 29 countries--with worried looks in a turbulent and rough sales climate.

It is in that anxiety-filled world that Saab-Scania is making its debut with its small SF-340 passenger plane and that the SAS [Scandinavian Airlines System] has dropped a "bombshell" with its call for a completely new passenger plane unlike any now in existence or being planned. By the SAS's own description, it is a wild idea and one that has obviously given aircraft designers and manufacturers something to mull over. It has also given rise to a touch of irritation or hesitation: they are having enough trouble selling what they already have, and what they have in the works are planes that are all larger--or smaller--than what the SAS wants.

Diplomatic

The big manufacturers at the Paris Air Show--the European consortium Airbus Industrie and Boeing of the United States--said in a diplomatically guarded manner that they were greatly interested in the proposal but that an order--even a big one--might not be enough to get the development of a totally new aircraft underway. It would cost upwards of 12 or 14 billion kronor for the plane and almost as much for an engine. At today's prices, the plane would have a unit price of between 175 and 200 million kronor.

"We can wait for them," is the curt comment from the SAS, "because their hesitation is understandable in times like these. But we must start pushing for it even if we don't need to start phasing our our modernized DC's until the early 1990's.

"We are also trying to interest other big airlines so as to get a larger number of planes and achieve the spread in orders that the manufacturers like to see."

Single Leap

What the SAS wants for itself and the charter airline SCANAIR and regards as possibly useful for Linjeflyg [the Swedish domestic airline] is a plane that can reach European destinations in a single leap. To that extent, the plane will be like the DC-9 it is to replace, but that is where the similarity ends.

This is where Jan Carlzon and his technicians and planners come in with wild ideas based partly on the philosophy that the cargo space in a European airliner does not need to be as big as it is now and that a plane's passenger compartment needs real baggage space, big cloakrooms, and more toilets.

The goal is to reduce the plane's time on the ground--time spent on the ground costs a lot of money--and the waiting time for travelers.

The SAS says that 70 percent of its passengers prefer to avoid baggage check-in and the resulting long wait to pick up their baggage when they reach their destination.

Wild Ideas

The SAS has also calculated that in today's planes, only 60 percent of the space in the hull is used sensibly. That can be increased to 80 percent by rotating the body 90 degrees, for example. That is one of the wild ideas.

In cross section, an airplane of today looks roughly like a figure 8 with two "bubbles," one on top of the other--the upper bubble for passengers and the lower bubble for cargo and baggage.

Jan Carlzon, Curt Nicolin (chairman of the board), and their fellow thinkers have shifted that "figure 8" by 90 degrees--an idea hatched by Curt Nicolin--and thereby reduced the cargo space and enlarged the passenger compartment by the same extent, thus providing plenty of space for items that are of direct use to passengers: cloakrooms, space for baggage, and more toilets.

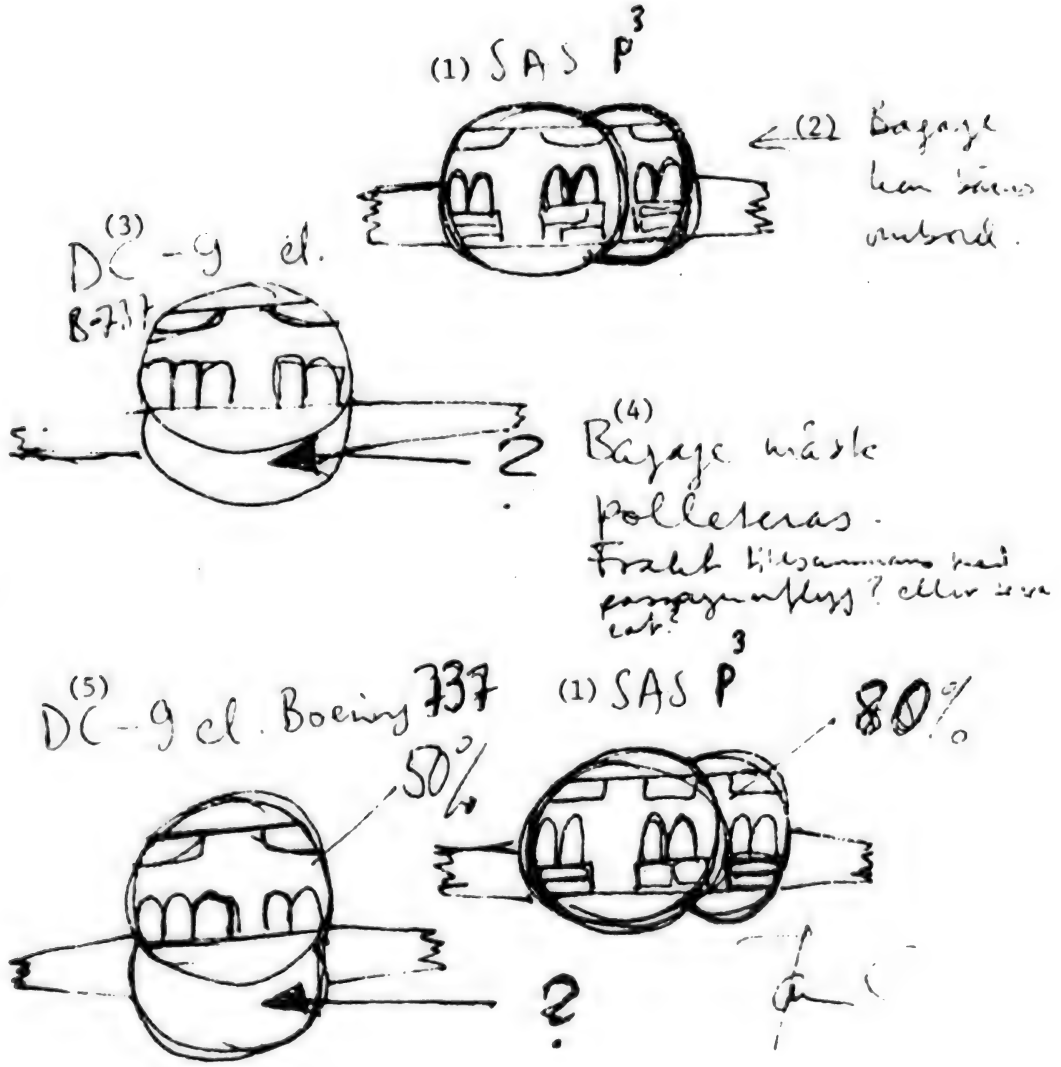
The SAS want list also calls for the possibility of easily rearranging the rows of seats--electronically, for example--so as to increase or decrease the spacing between them depending on the ratio of reservations between business travelers and the cheaper tourist fares.

The airplane is to contain between 115 and 130 seats.

That, in general, is what the SAS laid on the manufacturers' desks in the form of sketches drawn on tablecloths and napkins and during visits to the manufacturers by Jan Carlzon and Curt Nicolin.

We have learned that the airplane has been tentatively named the "P3" or the "PPP"--an abbreviation for "Passenger Pleasing Plane."

Jan Carlzon says: "A plane that costs upwards of 200 million kronor should also provide the traveler with something totally new. And the manufacturers have



Sketch by Jan Carlzon, head of the SAS, of a new airplane, showing how space is made available to passengers by turning a DC-9 90 degrees. The result is that the aircraft space available to passengers is increased from about 50 to 80 percent. The question marks indicate a questioning of whether it is sensible to carry cargo in passenger planes, considering the time it takes to load and unload cargo.

Key:

1. SAS P3
2. Baggage can be carried on board
3. DC-9 or B-737
4. Baggage must be checked. Cargo carried on a passenger flight or separately?
5. DC-9 or Boeing 737

some nice little sketches gathering dust in their desk drawers, but no one has dared to tackle them."

The SAS idea would most certainly be a labor-of-love assignment for the manufacturers in normal times.

But it will be a while before times return to normal--2 or 3 years, according to observers at the Paris Air Show and in the international trade periodicals. It will be a full-time job just to navigate straight ahead until then and still have enough strength and capacity to grab hold of the expected upswing.

In today's situation, the manufacturers have troubles closer at hand--the problem is whether to concentrate on civilian or military aircraft or both. The two markets account for approximately equal shares of total production, and in general, each represents the same prodigious turnover: between 190 and 225 billion kronor per year.

Fewer Worries

Military production is slightly in the lead, and according to reliable sources, it provides the best profits. Financial worries are not as pronounced as those in connection with civilian production, although sales to military forces in the West are no longer as automatic as they once were.

The JAS project is not the only one being scrutinized down to its smallest technical and financial details.

On the civilian side, planes are being built and plans are being made for new ones in an environment made up almost exclusively of poor customers who either cannot, will not, or dare not place orders in the prevailing uncertainty about the future.

The airlines--both the major ones and the small, so-called regional airlines--are still having a hard time making their operations pay their way, or at least enough so that money is left over for new purchases.

Stiff Competition

Although the number of passengers is rising, earnings are falling because of increasing competition, which leads to constant price wars and unprofitable discounts. The crowd of money-losing companies naturally has its exceptions.

As is known, the SAS is one of them because of its concentrated efforts to attract business.

Crossair, the Swiss regional airline--which, incidentally, is a purchaser of Saab-Scania's SF-340--is another example. Crossair increased its net earnings by nearly 700 percent from 1981 to 1982. Still another example is the American "people's airline"--People Express--which recently inaugurated low-fare routes over the Atlantic in the best Freddie Laker tradition: a single passenger class, no charming extra services, and secondhand airplanes.

Last year's sales statistics speak for themselves. About 220 new planes were sold last year--or a few more if we include the so-called options--and 330 were sold the year before that. Compare those figures with the 700 or 800 being sold annually at the end of the 1970's.

At the same time, the inventory of secondhand planes is growing because of overcapacity and unprofitability.

Moreover, the day is drawing nearer when new noise and exhaust regulations will go into effect around the world (at the start of 1985). When that happens, thousands of planes will be grounded for good if they are not equipped with new engines.

"We know that it is spring, but we have not felt it yet." That is how a representative of Airbus Industrie sums up the current situation.

But while business is sluggish at present, there are great predictions for the future--the period between now and the turn of the century. Various estimates that have been made concerning the need for large commercial aircraft center around the figure of 6,700 at a total value of 2 trillion kronor.

According to forecasts, the need for the smaller class of plane--from 15 or 20 to 50 seats--will not be much smaller at 6,500.

It is into the latter class that Saab-Scania and its American partner Fairchild fit with their SF-340, whose current price is close to 40 million kronor. Within that class, so many manufacturers are already scrambling for the market with the airlines that the talk is no longer about competition: the word now being used is "war." A large number of the customers--the so-called regional airlines--have also been hit by the recession, although not as severely as the major airlines.

The outlook for regional airlines is considered good, partly because the new planes now on the way are regarded as being the right ones from an economic standpoint. They are fuel-efficient turboprop aircraft that, as one example, can take over routes for which the fuel-thirsty jets are too expensive. It is that kind of "castling" that the SAS has put into effect on the Jonkoping-Copenhagen run by converting from DC-9's to the smaller, turboprop-driven Fokker F-27's.

11798
CSO: 3698/334

THAI AIRWAYS BUYS TWO AIRBUS A 300-600's

Paris LES ECHOS in French 30 May 83 p 20

/Excerpt/ Everyone is satisfied. Boeing has succeeded in selling a 747-200 which it will deliver next year. Airbus sold two A 300-600's which will be put in operation in 1985. And Thai Airways has extracted a discount of twenty-three million dollars from the Europeans who agreed to take back a surplus of three DC-8s from Thai Airways for the smart sum of $15 million. "We are all very cunning," asserted Chatrachai Bunya-Ananta, vice-president of the Thai company, with a big smile.

Bernard Lathiere, administrative manager of Airbus Industrie, is, unfortunately, much less talkative about the matter. Questions of price are the dealings discussed between businessmen, not in public. "It is not a discount, but a fine victory."

With a small difference of opinion all the same: "We are not taking the DC-8's back from the Thais. There has not been an agreement," assured the Airbus boss at the Paris Air Show. Strange... Unless the verb "to take back" does not have the same meaning in French and in Thai.

But it does not matter much after all. This is but a tiny detail in a commercial battle where the only victory which mattered was keeping the wolf from entering the sheeppen.

A $96 million contract for Airbus Industrie, who thus gets the first firm order since the beginning of the year. And who pulls off two other contracts as well - again for the A 300-600 - as options. Thai Airways is doubly satisfied, for this second order again includes a discount: $20 million. Would Airbus Industrie be taking a liking to bargains?

"The price difference is solely because of General Electric's delay," boomed Bernard Lathiere. "Moreover, we have explained ourselves clearly on that to the Americans." To the point of making them share the burden of the refunds? The Airbus chief did not want to say anything. But it is hardly probable that he had agreed to pay everything.

And there is no question that such compromises are becoming the norm. "We know very well how to send walking - Bernard Lathiere used a wholly different

c.rm - the companies who want completely unjustified prices," the administrative manager of Airbus Industrie declared. Alright, the Europeans will not sell off their planes.

But with the competition helping, no doubt they will find - as have the others - the appropriate formulas - very properly inaugurated - for selling them despite the crisis.

Will everyone be happy? It is not certain. But each will be able to consider himself very shrewd.

12354
CSO: 3698/321

SINGAPORE AIRLINES ORDERS SIX AIRBUS 310-200's AT LE BOURGET

Paris LES ECHOS in French 1 Jun 83 p 8

/Article by Arnaud Rodier: "One Billion Dollars for Boeing, $420 Million for Airbus"/

/Excerpts/ A dramatic surprise yesterday at the Paris Air Show, where they have begun, for lack of striking events, to get a little bored. Sixteen planes ordered in one stroke!

A miraculous contract. Doubly so, since it does not create envy: one billion dollars for Boeing, $420 million for Airbus.

The happy benefactor - one can hardly keep from using the term - is an Asiatic company, Singapore Airlines. A symbol in itself. Asia is precisely the market where Boeing and Airbus have engaged in the most severe battle there is. But yesterday both could get decked out.

Airbus, for its part, sold a solid six A 310-200's (218 passengers) which Singapore Airlines will receive beginning in 1984, all to be in service in 1985. Two of these aircraft, however, replace two orders for A 300-B4's - they own six of them and are to receive two more in September - and the company is reserving the possibility of selling three other Airbuses back to the European consortium.

The conditions of the financing package are not yet defined either. But little matter. Finally an important contract! On both sides of the Atlantic they are breathing again. And they are regaining hope.

"The market is taking off again. It took a very dynamic company to anticipate the recovery. It is the swallow before the spring," Bernard Lathiere, administrative manager of Airbus Industrie, has no fear to assert. Is it true?

For Airbus and for Boeing the match is only just beginning. Two shots yesterday. Which portend a long battle. Asia is pretty and healthy, here and now the closed field for a battle to the death. It is a question of conquering the only market which not only is resisting the crisis, but also represents the recovery.

The Americans are not lacking trump cards, nor the Europeans inspiration: "Boeing is fighting for a monopoly; we, we are fighting for our place in the sun," Bernard Lathiere declared.

12354
CSO: 3698/321

CANADIAN MINISTER DECLARES READINESS TO WORK ON AIRBUS

Paris LES ECHOS in French 30 May 83 p 20

[Excerpts] "We are finally ready to work on the Airbus A-320," Gerald Regan, Canada's Minister of International Trade, confirmed yesterday at the Paris Air Show [Salon du Bourget]. But today the politician must yield to the businessmen, the true negotiator, since the principle of Canadian participation in the program for the small 150-seat Airbus has been accepted since last year.

Also, the minister is anxious to appear very discreet on the subject, above all hesitating to approach the thorny question of the division of work responsibilities among the project's partners.

The minister meanwhile does not fail to recognize the importance of aeronautics in Canadian industry. The revenue in this sector itself should reach 7 billion Canadian dollars from now to 1986, with a large part export trade. In six years, in fact, the volume of sales realized abroad has gone from $600 million to $3 billion. Canada no longer has the feeling of being a simple outsider.

One hundred and twenty-five firms, 40,000 people, $1.8 billion invested in research and development since 1978, these are the assets that the government of Elliott Trudeau well expects to use in multiplying opportunities for international cooperation.

12354
CSO: 3698/321

AIRBUS OFFICIAL SAYS ORDERS NEEDED BEFORE A-320 LAUNCHED

Paris LES ECHOS in French 2 Jun 83 p 15

[Text] Aerospatiale Tied Hand and Foot to the Airbus Program

"It is the moment to launch the Airbus A-320. We have decided to enlarge our family." A known theme, dear to Jean Martre, president of Aerospatiale, and, before him, to Jacques Mitterand, that today returns to Andre Etesse, director of the aircraft division. A question of survival above all.

Airbus represents 65 percent of the group's business and the pace of airplane assembly, which should have climbed to 8 to 9 units a year ago, is stabilizing at only 5 today. It is already too much, some people feel. That is what worries the personnel at the Toulouse factories, even if Andre Etesse asserts that "1983 and 1984 production is set in motion." The research departments of Aerospatiale have work for a year and a half or two years. But what happens after 1985 is an unknown. "Certainy a set-back without the A-320," acknowledged the chief of the aircraft division.

The ATR-42: A Future Niche

Would it be necessary then to launch the 150-seat craft without waiting for buyers? Jacques Mitterand was not far from thinking so. Andre Etesse is more cautious. Without engines, with signs of only one declared buyer, Air France, and without truly knowing if it would be more efficient than its competitors, it is difficult. Impossible to see. But at present, he asserts, the situation has changed. Airbus Industrie can present an aircraft whose characteristics are defined with enough precision. And Aerospatiale bases great hopes on the commercial circuit which the European consortium has undertaken. "We can guarantee particularly attractive operating costs. Our plane is a better bargain by 10 percent in comparison to all the others," Andre Etesse emphasized.

It remains that Aerospatiale could not survive with Airbus as its only source of business. Hence its efforts to gain positions in other markets, civilian and military. And with more luck, moreover. The ATR-42, which now employs 1000 people of the total 14,000 - "what would we have done without that?" asks the division chief - is starting off well. Forty-five firm orders and 15 options for the time being. "From now to the end of the

year, we will sell between 25 and 30 of them," projects Andre Etesse, who adds, "all of them serious contracts, with installment payments." To the point where the company is considering increasing the plane's production schedule according to regional capabilities (four aircraft per month at the present time) as early as next fall. "This sector is a sector of the future" assures the division head.

Aerospatiale is preparing, moreover, to also base a family on the ATR-42. At present these are only mock-ups, but the company is here and now beginning to feel its way in the commercial sector in order to determine if a derivative could interest the companies. The program could materialize around 1988.

Opportunities, but still a market in crisis. "Times are hard," sighed Andre Etesse. "What we lack the most are orders. What we must do is hold on. Hedge our bets." A calculated comment which is first meant as an encouragement directed to his successor. Indeed, the chief of the airplane division is leaving his position, where he will be replaced by Jean Pierson, the first of July.

12354
CSO: 3698/321

ERRATUM: This article is republished from JPRS 83566 of 27 May 1983 No 145 of this series, p 24 to replace commas with decimal points in figures.

VOLVO TURNOVER UP THIRTY-NINE PERCENT IN 1982

Paris AUTO-INDUSTRIES in French 31 Mar 83 p 1

[Text] Goteborg, 30 Mar (AFP)--The Swedish firm Volvo had a sales volume of 75.624 billion kronor (same in francs) as compared to 54.407 the previous year, for a 39 percent increase, according to the company's annual report published on 30 March in Goteborg.

Foreign sales amounted to 62.403 billion and sales on the domestic market to 13.211 billion.

Profit before taxes and fiscal year allotments nearly doubled, going from 1.425 billion kronor last year to 2.440 billion kronor. After taxes (508 million as compared to 222 in 1981), profits amounted to 1.932 billion (1.203 in 1981). The general meeting, to be convened for 25 May, will consider a proposal to pay out a dividend of 10 kronor (9 in 1981).

The energy (oil) branch recorded the largest sales and the most spectacular growth, at 33.512 billion (19.503 in 1981, up 71 percent).

Automobile sales amounted to 18.109 billion (as compared to 13.569, +33 percent), sales of commercial vehicles were 14.024 billion (11.516, +22 percent), and truck sales were 10.793 billion (8.209, +31 percent). Bus sales, however, remained the same at 1.028 billion.

Airplane engine sales also increased considerably, with sales reaching 919 million (590 in 1981).

Industrial and fixed investments attained 2.260 billion, including 1.232 billion for the transport vehicles sector and [.] 846 for the energy sector. Investment in shares amounted to 1.624 billion. There were 75,136 total salaried employees at the end of 1982, a reduction of 949.

9805
CSO: 3698/275

BRIEFS

FITERMAN SEEKS AIRBUS PARTNER--"We are progressing well. The necessary conditions are being established. I strongly hope that from now to the end of the year we will be able to reach a definite decision. Charles Fiterman appeared willingly yesterday to be very discreet on the subject of the Airbus A-320. Nevertheless, he announced that relevant ministers responsible for the countries participating in the European consortium will meet again soon. "After the British elections," Charles Fiterman specified. But the government, indeed, continues to think that it ran big risks in alone making a decision which is not within its sole jurisdiction to boot. "It would be desirable if there were another company," the Transport minister again acknowledged yesterday, adding: "I have strong hope." [Text] [Paris LES ECHOS in French 2 Jun 83 p 15] 12354

CSO: 3698/321

END

END OF FICHE DATE FILMED

July 25, 1983